

# CITYWIDE FLOODPLAIN MAPPING

City of Covington, Georgia

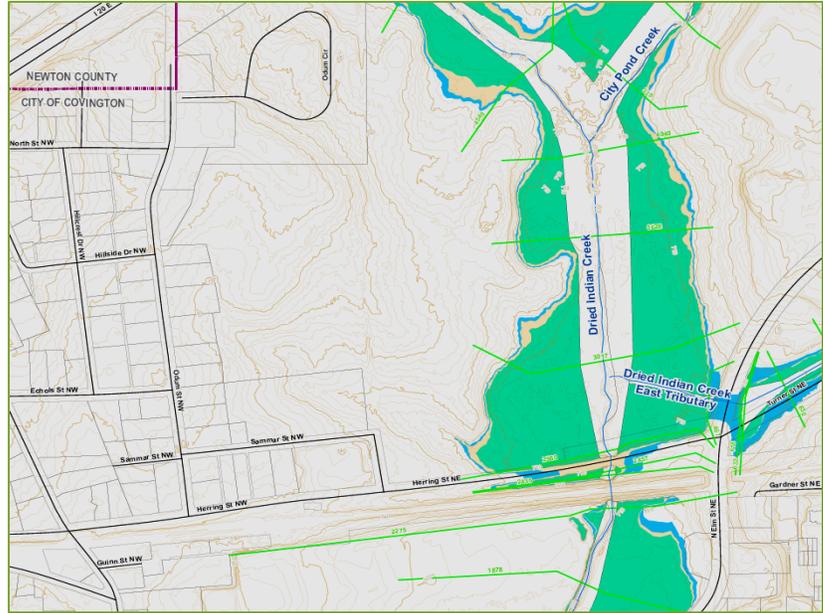


## CLIENT

City of Covington, Georgia

## SCOPE OF SERVICES

Hydrologic Modeling  
Hydraulic Modeling  
GIS based Floodplain/Floodway Mapping  
GIS Database Development  
Surveying



The City of Covington, Georgia contracted with Manhard Consulting to develop new floodplain mapping for the City. Both existing and future land use conditions were modeled for approximately 25 stream miles over a period of four years in conjunction with a Citywide Stormwater Master Plan to meet the City's planning and budget needs.

The 2-, 10-, 50-, 100-, and 500-year flood discharges for existing and future conditions were determined using the USACE Hydrologic Modeling System, HEC-HMS, to accurately model the watersheds' response to theoretical rainfall events. Manhard developed a HEC-HMS flood hydrograph/hydrologic model utilizing ESRI's ArcHydro data model with the HEC-GeoHMS ArcGIS extension. Peak flood discharges were estimated at key locations within the studied basins.

Based upon historic flood elevations and other pertinent information including the hydrologic modeling results, base flood elevations (BFEs) were determined for the 10-, 50-, 100-, and 500-year floods for existing and future (built-out) conditions. A HEC-RAS hydraulic model was developed using with the HEC-GeoRAS ArcView interface. HEC-RAS was used to calculate water surface profiles for each storm event with existing and future conditions flows.

To complete the project, existing 100-year, 500-year and floodways were mapped. The existing conditions floodplains and floodways were used to update the FEMA Digital Flood Insurance Rate Maps (DFIRM) on the resultant floodplain mapping. While the City is not included in the Metropolitan North Georgia Water Planning District, they did foresee the need to develop future conditions floodplains to help guide their future growth and development decisions. Manhard developed future conditions flows based on the future conditions land use included in their comprehensive plan. This future conditions floodplain functions as the City's regulatory floodplain.